

REMARKS / ARGUMENTS

The Final Action, pages 1 - 13, repeats its previous rejections. Those were addressed in Applicant's previous Amendments.

Three exceptions lie in the rejections of claims 18, 19, and 21, which were previously rejected on grounds of anticipation based on Stridsberg. Now the Final Action rejects these claims as obvious based on Stridsberg and Mukai. Applicant's previous arguments regarding a lack of a teaching, and a lack of the claim elements in the references, even if combined, apply to these claims.

The Final Action, page 13 et seq., presents responses to the arguments of Applicant's previous amendment. These responses are addressed below.

Re: Final Action, Page 13 (Anticipation Rejections)

The Final Action, page 13, addresses Applicant's arguments to "anticipation rejections," which presumably refers to the arguments relating to claims 18, 19, and 21.

Re: DC Automotive Steering Motor

The Final Action, page 13, asserts that Applicant argues that claim 18 merely recites a "DC automotive steering motor." The Final Action states that Stridsberg shows a DC motor, which could be used as an automotive steering motor and thus Stridsberg shows the claimed motor.

Applicant submits that the Final Action is incorrect. Claim 18 recites:

. . . 3-phase DC automotive steering motor, **within a power-steering system of a vehicle**. . .

In Applicant's argument, Applicant used the shorthand phrase "automotive steering motor," which referred to the larger phrase, **highlighted above**, and contained in the claim.

Applicant points out that the shorthand phrase, which was used for simplicity of discussion, does not control. The actual claim language governs.

Stridsberg does not show a "motor **within a power-steering system of a vehicle**," as claimed.

The Final Action, page 14, top, asserts that another reference shows a DC motor in a power steering apparatus. However, Applicant respectfully submits that the rejection is an anticipation rejection, based on section 102 and, therefore, the reliance on another reference is not proper.

Re: Final Action, Page 14

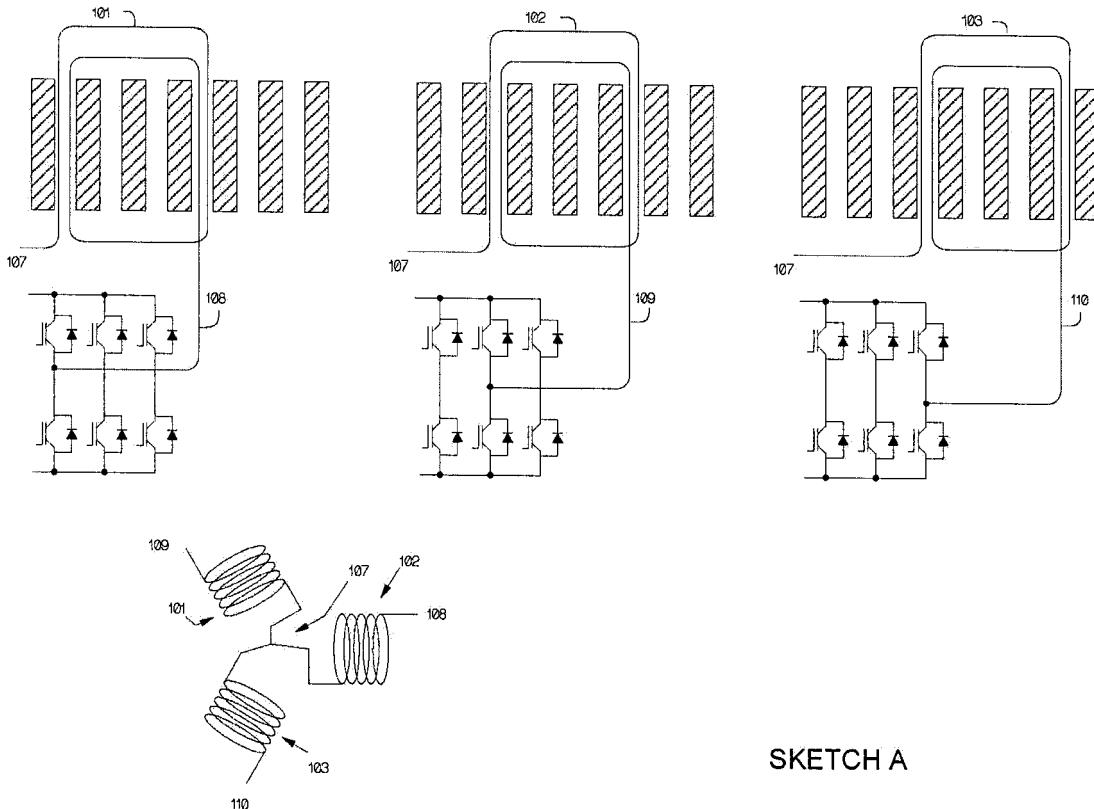
"Alternative" in Stridsberg

The Final Action, page 14, first full paragraph, apparently agrees that the originally cited passages of Stridsberg do not anticipate the claims. Accordingly, the Final Action points to an "alternative" in Stridsberg, namely, column 10, lines 7 - 11, and Figure 1.

However, this alternative does not teach of the rejected claims for several reasons.

DESCRIPTION OF ALTERNATIVE AS UNDERSTOOD

Stridsberg, top of column 4, states that this alternative, shown in his Figure 1, contains three phases (101, 102, and 103). Figure 1 is highly detailed, so a rendition of Figure 1 is shown below as SKETCH A, and shows the three phases separately.



All three phases are connected to point 107. (Column 4, line 7.) Thus, the three phases are Y-connected, as indicated by Applicant's sketch at the bottom of the SKETCH A.

Regarding the "alternative" upon which the PTO relies, Stridsberg states:
Another alternative is to have the six pole groups shown [in Figure 2] connected as two sets of normally Y-connected winding sets each driven by six switches as shown in FIG. 1. (Column 10, lines 7 - 9.)

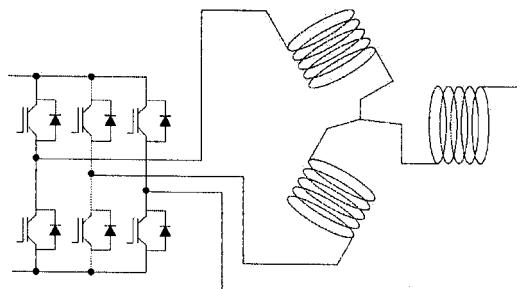
That is, this statement says the following:

-- divide the six "pole groups" of Figure 2 into two "sets," of three groups each.

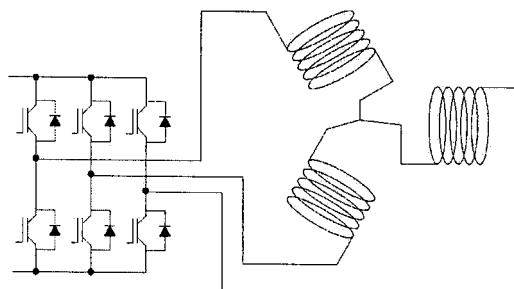
Serial No. 10/609,893
Examiner: Luis Enrique Román
Response to Office Action mailed November 15, 2006

- Arrange each "set" as "normally Y-connected."
- Switch each "set" using the six switches of Figure 1.

The following SKETCH B (shown below) illustrates this graphically:



ONE "SET"



SECOND "SET"

SKETCH B

ALTERNATIVE DOES NOT SHOW CLAIM - REASON 1

Claim 18 recites:

- (3) identifying the pole wherein said short occurred;
- (4) identifying the pole group of the failed pole; and
- (5) terminating current flow to **all poles in the pole group of the failed pole.**

Applicant is unable to find this operation in the above SKETCH B, and requests that the PTO point to an explanation in Stridsberg which shows that, for example, current is terminated to "all poles in a pole group" in the above SKETCH B.

Applicant further explains why the claimed operation does not appear in the "alternative."

Applicant points to Stridsberg's Figures 2 and 3. The PTO previously asserted, in those Figures, that each of the following triplets (e.g., U1 - U3 is one triplet) represents one "pole," for a total of six poles: U1 - U3, V1 - V3, W1 - W3, U4 - U6, V4 - V6, and W4 - W6.

Stridsberg states (column 4, line 17 et seq.) that "phase U" is divided into two "groups," namely U1 - U3 and U4 - U6. Stridsberg expressly states that the stator windings of his Figure 1 (the alternative) are not divided into groups. (Column 4, lines 16, 17.)

Restated, Stridsberg states that his "alternative" represents conventional prior art (column 3, lines 33 - 35 and lines 66, 67). He distinguishes his invention over that prior art on the grounds that his invention divides the stator windings into "groups." (Column 4, lines 16 and 17.)

Claim 1 recites

- "disabling **all of said poles** within the m-phase group" and
- that "m" phases are disabled, wherein "m" is equal to, or greater than, 2.

Applicant submits that the claimed "group" is not present in Stridsberg's Figure 1 and, therefore, does not teach of the rejected claims. Therefore, Applicant requests, under 37 CFR § 1.104(c)(2) and 35 U.S.C. § 132, that the PTO specifically identify the claimed "groups" in Stridsberg's Figure 1.

ALTERNATIVE DOES NOT SHOW CLAIM - REASON 2

Stridsberg states that he terminates one "winding group" (another term for "pole group.") (Abstract.) For example, the three coils U1 - U3 in his Figures 2 and 3 form one "winding group." (Column 4, line 32.)

Applicant requests that the PTO explain how claim 1 is found in the above SKETCH B, which is believed to be a graphical representation of the text of Stridsberg, which is relied on to show the "alternative." Applicant cannot see the claimed:

- "stator including 2m poles"
- "said poles . . . organized into first and second m-phase groups"

nor

-- means for disabling all of said poles within the m-phase group of a shorted pole which has been so detected, to thereby disable all m phases in the group, wherein m is equal to or greater than 2.

Applicant points out that, if the disablement of Stridsberg is taken as meaning "shut down (that is, open-circuit) the transistors driving a coil," then such disablement seems to render Stridsberg inoperative. Since the "alternative" is Y-connected, as in the SKETCH B, opening the transistors which drive one coil, in effect, places the other two coils in series. Applicant requests (1) an explanation of how these two coils are powered under these conditions, and (2) where Stridsberg provides that explanation.

ALTERNATIVE DOES NOT SHOW CLAIM - REASON 3

As explained in REASON 2, above, the "alternative" of Stridsberg divides the six triplets of his Figure 2 into two "sets." But those "sets" are each "normally Y-connected," in his words. Presumably, that Y-connection refers to the example of his Figure 1, which he refers to as "conventional." (Column 3, bottom.)

As explained above, Stridsberg states that the "conventional" arrangement lacks "groups." (See column 4, line 16 et seq.)

If the claimed "groups" are absent from the "conventional" Y-connected system, then how do "groups" arise when two such "conventional" systems are constructed, as in SKETCH B?

Stridsberg disables only a **single** one of these triplets, such as U1 - U3. That does not show "disabling **all of said poles** within the m-phase group" and disabling two, or more, "phases," as claimed.

To show the claimed language, as a minimum, under the PTO's interpretation of Stridsberg, all of elements U1 - U3, V1 - V3, and W1 - W3 in Stridsberg's Figure 3 must be disabled together. Stridsberg does not do that.

Re: Final Action, Page 14

Second Full Paragraph

The Final Action, page 14, second full paragraph, asserts that Stridsberg does, in fact, shut down poles in addition to a pole which is found to be faulty, as the claims recite.

The Final Action points to Stridsberg's Figure 5, and says that "a pole group or pole groups may be terminated." However, the Final Action has not shown where Stridsberg states that a working pole is shut down in addition to a faulty pole.

The mere fact that Figure 5 can be operated in a certain manner is not relevant.

MPEP § 2143.01 states:

III. FACT THAT REFERENCES CAN BE . . . OR MODIFIED IS NOT SUFFICIENT TO ESTABLISH PRIMA FACIE OBVIOUSNESS

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

...

IV. FACT THAT THE CLAIMED INVENTION IS WITHIN THE CAPABILITIES OF ONE OF ORDINARY SKILL IN THE ART IS NOT SUFFICIENT BY ITSELF TO ESTABLISH *PRIMA FACIE* OBVIOUSNESS

A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art" at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references.

Stated simply: the PTO is merely setting forth a supposed possible mode of operation of Stridsberg's Figure 5. That is insufficient to support a 103 - rejection.

Last Paragraph

The last paragraph of page 14 of the Final Action attempts to rebut Applicant's arguments that no sufficient teaching has been given for combining Stridsberg with Mukai.

However, that paragraph merely sets forth supposed characteristics of each reference. That paragraph does not set forth a teaching in favor of combining the references to reach the claims.

Further, that paragraph sets forth supposed advantages of the Stridsberg reference, as a basis for combining the references. However, if you want to attain those advantages, you can rely on the Stridsberg reference alone. You do not need to combine Stridsberg with Mukai. Thus, the advantages do not act as a teaching.

Applicant points to MPEP § 706.02(j), which states:

Contents of a 35 U.S.C. 103 Rejection

. . . After indicating that the rejection is under 35 U.S.C. 103, the examiner should set forth in the Office action:

- (A) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate,
- (B) the difference or differences in the claim over the applied reference(s),
- (C) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and
- (D) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure.

The Office Action has not shown a teaching in the prior art which leads to the modification of the references. It may be true that the characteristics and advantages of each individual reference, as stated in the last paragraph of page 14 of the Final Action are found in the prior art. However, no explanation has been given as to how that material leads one to the claimed invention.

Serial No. 10/609,893

Examiner: Luis Enrique Román

Response to Office Action mailed November 15, 2006

Stated another way, one, or more, steps in the chain of reasoning are missing from the PTO's rationale.

- The PTO begins with the characteristics supposedly found in the references.
- The PTO then jumps to the conclusion that if the references are combined to achieve the claimed invention, then certain advantages are obtained.

It is respectfully submitted that such analysis is not a teaching under section 103. If it were, then arguably **every invention** would be obvious because every invention has some type of advantage.

Further, Applicant respectfully points out that it is the **Patent Office** which is asserting that the supposed advantages of the individual references should be combined together, but that assertion has not been shown in the prior art.

Re: Final Action, Page 15

Claim 1

The Final Action merely asserts that, if you combine the references, you thereby add the advantages of Stridsberg to Mukai.

POINT 1

Applicant points out that this is actually circular reasoning.

The PTO is stating, in effect, that the motivation for combining the two references is that, in the combination, the advantages of both references are obtained. That is circular reasoning. The conclusion is being used as a premise in support of the conclusion.

This type of reasoning states nothing more than "If you combine A with B, you get A and B together." That is not a teaching under section 103.

POINT 2

Further, this type of reasoning is self-contradictory. If this reasoning is valid, then the following reasoning is also valid: "You **should not** combine the two references, because if you combine them, you get the **disadvantages** of both in the combination."

POINT 3

The PTO's reasoning is based on an implicit premise which has never been proven. That premise is that benefits, or advantages, of references are cumulative. That is, the premise states that, if you combine two references, you get a combination of all benefits of the two.

That premise has not been proven, and is suspect, as a matter of common sense.

For example, if this premise is valid, then one can state that, if you combine a naval aircraft carrier with a C-140 cargo aircraft, you get the advantages of both. But such a statement is clearly absurd: aircraft carriers cannot fly, at least not using today's technology.

Therefore, the unstated premise (that the benefits of both references are cumulative in the combination) must be proven. Evidence is required.

For the reasons mentioned earlier and in Applicant's prior response, Applicant believes claim 1 is not obvious in view of the references when viewed alone or in combination.

Claim 11

FIRST PARAGRAPH

In the first paragraph, second sentence, headed "Claim 11," Applicant assumes that the phrase "**Applicant** wishes to note . . ." should read "The **Examiner** wishes to note . . ."

This phrase concludes that Stridsberg . . . provides a list of the features of the invention which are taken as improvements/teachings for the Mukai . . . device. However, no justification or basis has been given for this conclusion, and this conclusion seems to be arbitrary. Stated more simply, the phrase states that the "features" on the "list" are "taken" as "teachings" that the "features" should be added to Mukai. As understood, it seems that the PTO is making an interpretation that a list of features present in Stridsberg should be added to Mukai.

That is not a teaching under 35 USC § 103, but merely an arbitrary assertion by the PTO. And that is not consistent with the CAFC's decision of In re Dembiczak, 175 F. 3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999).

In brief, Dembicza states that

- **objective evidence** of a teaching for combining references must be provided;
- the Examiner's speculation does not qualify as objective evidence;
- numerous sources can provide a teaching to combine references;
- knowledge of one skilled in the art can act as a source;
- however, THE RANGE OF SOURCES AVAILABLE DOES NOT DIMINISH

THE REQUIREMENT FOR ACTUAL EVIDENCE;

- broad conclusory statements by the Examiner do not qualify as evidence; and
- "particular factual findings" as to the teaching are required and gives reasons why **facts** are necessary.

Serial No. 10/609,893

Examiner: Luis Enrique Román

Response to Office Action mailed November 15, 2006

Applicant points out that the PTO's interpretation of Stridsberg as giving a teaching that a "list" of "features" in Stridsberg should be added to Mukai is inconsistent with Dembiczaak.

- No "objective evidence" supporting this interpretation is given.
- The interpretation is a "broad conclusory statement," specifically prohibited by Dembiczaak.
- No "particular fact findings" have been given.

SECOND PARAGRAPH

The PTO has not rebutted the contradiction which Applicant explained and points to in the two references.

THIRD PARAGRAPH

The PTO still has shown no expectation of success. Applicant repeats a paragraph from his previous response to the PTO:

No expectation of success has been shown, as required by the MPEP. Mukai shows a motor having two inputs. Stridsberg's motor has 12 inputs. The PTO has not shown how Stridsberg's motor can be incorporated into Mukai's control system.

FOURTH AND LAST PARAGRAPHS

The passage cited in Mukai does not support the proposition set forth by the PTO.

The Mukai-passage states that, ordinarily, if a sensor malfunctions, power steering can be reduced or terminated. In such a case, the driver will experience an increase in steering effort.

Mukai solves this problem by detecting **the sensor failure**, and switching to another control algorithm (or system) in response. (Column 7, line 16 et seq.) In this manner, power steering is maintained.

This Mukai-passage does not state that additional current is added to compensate for current which is terminated, as the PTO asserts.

Re: Final Action, Page 16

First Paragraph

The Final Action asserts that Stridsberg, column 10, lines 28 - 32, discusses regular 20-degree spacing. However, that passage says nothing about spacing. It states that the previous discussion considered **rotating** machinery, but that the principles of his invention are also applicable to **linear motors**.

Applicant points out that, in a linear motor, angular spacing does not even exist, let alone a specific spacing of 20 degrees. Thus, this passage of Stridsberg is completely irrelevant.

The Final Action asserts that Stridsberg's Figure 10 shows the regular 20-degree spacing. However, that Figure 10 illustrates "a second embodiment." (Column 3, line 59.) That "embodiment" has nothing to do with the invention of Stridsberg which was combined with Mukai.

That embodiment takes a prior art motor, and adds thermal shielding. (Column 10, line 14 et seq.) That embodiment accomplishes a completely different goal.

Further, no teaching has been given in favor of selecting that embodiment, over the embodiment of Stridsberg's Figure 2. Restated, as to the claimed spacing, Stridsberg contains contradictory teachings. No resolution to the contradiction has been given.

Second Paragraph

This paragraph does not identify a supposed defect in Applicant's argument. Nor does it provide a rebuttal to any argument made by Applicant.

This paragraph only sets forth a supposed teaching of Heine. But, on its face, that teaching only applies to Heine's device. The PTO has not shown why that teaching should be applied to the other references.

Section on Claim 18 (Spanning from Center of Page 16 To Page 17)

All content of this section has been addressed elsewhere herein.

The last paragraph cites several passages in Stridsberg, which supposedly show that current is terminated to all poles in the pole group. These several passages are also repeatedly cited later in the Office Action. The passages are addressed here.

STOCK CITATIONS

- Abstract, last sentence. This merely states that "suitable switches can be disabled, disconnecting a faulty winding group." This does not show terminating current to all poles in the pole group, as claimed.
- Column 2, lines 32 - 40. This states that "individual" windings can be disconnected, thereby leaving "other windings or coil groups" connected. This does not show the claim recitation in question.
- Column 2, lines 57 - 65. Again, this merely states that some windings are disconnected, and others left connected. This does not show the claim recitation in question.
- Column 12, lines 1 - 11. This passage contains part of a claim. This passage states that windings are disabled which are defective, or are associated with defective switches. This does not show the claim recitation in question.

-- Figure 5, elements 501 - 506. However, the Final Action does not explain how that Figure shows the claim recitation in question. Further, claim 18 states that the termination occurs in response to a malfunction. Stridsberg states (column 9, line 44 et seq.) that he manipulates the switches 501 - 503 and 504 - 506 in his Figure 5 **during normal operation**. One reason is to save power. Therefore, even if his Figure 5 shows the termination of more than one pole (which Applicant does not admit), the termination does not occur in response to the claimed malfunction. Stridsberg's Figure 5 does not show the claim recitation in question.

Therefore, Applicant submits that the passages and statements by the Examiner do not show the claim recitation in question, which is terminating current in all poles in the claimed pole group.

Re: Final Action, Page 17

Section on Claims 19 and 21

The content of this section is addressed elsewhere herein.

Claim 19 is considered patentable, based on its parent. In addition, claim 19 refers to "said" "pole groups" recited in its parent claim. As explained above, under parent claim 18, current is terminated in the **entire** "pole group," thus terminating all phases in that "group," and that is not seen in Stridsberg. (For example, current must be terminated in all of U1 - U3, V1 - V3, and W1 - W3 in Stridsberg's Figure 3, and that is not done.)

Therefore, "said" "pole groups" of the parent claim are not found in Stridsberg, and are thus not found in dependent claim 19.

The Final Action references the passages above, which have been discussed above.

Section on Obviousness (Last Two Paragraphs)

This section invokes the passages which were mentioned earlier.

Claim 1 recites "disabling **all of said poles** within the m-phase group" and that "m" phases are disabled, wherein "m" is equal to, or greater than, 2.

The Office Action mailed on May 17, 2006, page 2, states that each of the following triplets (e.g., U1 - U3 is one triplet) in Stridsberg's Figures 2 and 3 represents one "pole," for a total of six poles: U1 - U3, V1 - V3, W1 - W3, U4 - U6, V4 - V6, and W4 - W6.

Stridsberg disables only a **single** one of these triplets, such as U1 - U3. That does not show "disabling **all of said poles** within the m-phase group" and disabling two, or more, "phases," as claimed.

To show the claimed language, as a minimum, under the PTO's interpretation of Stridsberg, all of elements U1 - U3, V1 - V3, and W1 - W3 in Stridsberg's Figure 3 must be disabled together. That has not been done.

The "alternative" of Stridsberg discussed in the last paragraph of page 17 of the Final Action is addressed above.

Re: Final Action, Page 18

First Paragraph

The first paragraph apparently addresses the "m greater than 2" recitation of the last paragraph of page 17.

The first paragraph asserts that Stridsberg shows "two channels." However, the first paragraph has not shown how this shows "disabling **all of said poles** within the m-phase group" and that "m" phases are disabled, wherein "m" is equal to, or greater than, 2, as claimed.

Second Paragraph

As to the teaching for combining the references, the Office Action only points to supposed advantages found, or stated, in the two references individually. Neither reference suggests that these advantages should be added to the other reference. It is the **Patent Office** which makes that suggestion using hindsight or Applicant's disclosure, which is not a teaching under section 103.

Third Paragraph (Regarding Claims 22 and 24)

This paragraph refers to the passages which were discussed earlier.

Stridsberg states that he terminates **only one** of his "poles," such as W4 - W6. (Column 5, lines 54, 55.) That teaches against the claim.

This section fails to rebut Applicant's arguments.

Last Two Paragraphs (Relating to Claims 6 and 16)

Stridsberg's Figure 10 was addressed above.

The Final Action has not shown why Heine's teaching should be applied to the other references. Further, the Final Action has not shown how following the specific teaching of Heine leads to the **specific** claim recitation of "regular 20-degree intervals."

Further still, Heine is cited as showing skipping spokes. That is contrary to Stridsberg's Figure 10, which shows windings on all spokes.

Serial No. 10/609,893
Examiner: Luis Enrique Román
Response to Office Action mailed November 15, 2006

For all the foregoing reasons and in view of the amended claims as now pending, Applicant believes all claims as now pending are not anticipated by the references cited by the Examiner, and accordingly, they should be allowed.

The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-1287. Applicant hereby provides a general request for any extension of time which may be required at any time during the prosecution of the application. The Commissioner is also authorized to charge any fees which have not been previously paid for by check and which are required during the prosecution of this application to Deposit Account No. 50-1287. (Should Deposit Account No. 50-1287 be deficient, please charge any further deficiencies to Deposit Account No. 10-0220).

Applicant invites the Examiner to contact the undersigned via telephone with any questions or comments regarding this case.

Reconsideration and favorable action are respectfully requested.

Respectfully submitted,

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